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| 09/987,385 | 11/14/2001 | Toshiharu Hayashi | 2001_1697A | 7018 |

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EXAMINER

RUTHKOSKY, MARK

| ART UNIT | PAPER NUMBER |
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1745

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,385

Applicant(s)

HAYASHI ET AL.

Examiner

Mark Ruthkosky

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 11, 12, 21 and 22 is/are allowed.
- 6) ☐ Claim(s) 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1745

DETAILED ACTION

Specification

The substitute specification filed 9/22/2003 has been entered.

Claim Rejections - 35 USC § 102

The rejection of claims 3 and 4 under 35 U.S.C. 102(b) as being anticipated by Yoshizawa et al. (US 6,132,900) has been overcome by the applicant's amendment. The applicant has canceled the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over JP 11167909 A in view of Saito et al. (US 5,586,993) has been overcome by the applicant's amendment. The applicant has canceled the claims.

New Rejections

Claims 12, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 6,168,879) in view of Saito et al. (US 5,586,993.)

Art Unit: 1745

The instant claims are to a lid for a secondary battery comprising a plate-shaped body formed with a hole; a sealing member having a flange portion at one end and inserted into the hole; a rivet comprising a shank and a head, said shank having a first end inserted in the sealing member and caulked to join the sealing member and insulating member to the plate-shaped body, the shank having a second end opposite the first end wherein the head is provided on the second end of the shank and a lead wire directly connected to the first end of the shank.

Kim (US 6,168,879) teaches a lid for a secondary battery comprising a plate-shaped body having a hole formed therein; a sealing member, which is also an insulating member, having a flange portion at one end and inserted into the hole; a rivet comprising a shank and a head, said shank having a first end inserted in the sealing member and a second end opposite the first end wherein the head is provided on the second end of the shank and a lead wire directly connected to the first end of the shank (see figure 3 and column 1.)

The reference does not teach the rivet caulked to join the sealing member and insulating member to the plate-shaped body. Saito et al. (US 5,586,993), however, teaches a lid for a secondary battery comprising a plate-shaped body formed with a hole; a rivet terminal member and an insulating member superposed in a peripheral edge of the hole with the insulating member arranged under the terminal member; a cylindrical sealing member having a flange portion at one end and inserted into the hole; and a rivet inserted in the sealing member. The Saito reference teaches that the hole of the lid is caulked in order to seal and fix the rivet to the cover plate (col. 3, lines 45-end, col. 7.) It would be obvious to one of ordinary skill in the art at the time the invention was made to caulk the rivet and insulating member to the plate shaped body as caulking the members will allow for a strong, durable seal between the components of

Art Unit: 1745

the lid in order to prevent interaction between elements of the interior and exterior environments of the battery casing. Sealing components of a battery lid by caulking is broadly known in the art for this purpose. The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Claims 13-15 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US 6,168,879), in view of JP 11167909 and further in view of Saito et al. (US 5,586,993.)

Kim (US 6,168,879) teaches a lid for a secondary battery comprising a plate-shaped body having a hole formed therein; a sealing member, which is also an insulating member, having a flange portion at one end and inserted into the hole; a rivet comprising a shank and a head, said shank having a first end inserted in the sealing member and a second end opposite the first end wherein the head is provided on the second end of the shank and a lead wire directly connected to the first end of the shank (see figure 3 and column 1.) The reference does not teach the sealing member to comprise a flange portion and a cylindrical portion that is separate from the flange portion or that the cylindrical portion is made of a fluororesin.

JP 11167909 teaches a lid for a secondary battery comprising a plate-shaped body formed with a hole; a rivet terminal member and an insulating member superposed in a peripheral edge of the hole with the insulating member arranged under the terminal member; a cylindrical sealing member having a flange portion at one end and inserted into the hole; and a rivet inserted in the sealing member. The sealing member comprises a flat flange portion having a hole and a cylindrical portion that is separate from the flange portion (see figures 1-4.) The sealing member can be made from fluororesins (claim 2, for example.) It would be obvious to one of ordinary

Art Unit: 1745

skill in the art at the time the invention was made to include a sealing member having a flat flange portion with a hole and a cylindrical portion that is separate from the flange portion as shown in JP 11167909. Such a configuration will allow for a first separate and distinct gasket to be placed on the inside of the battery can to insulate the negative and positive contacts and a second gasket on the outside of the can to insulate the hole and the terminal from the negative plate as shown in the figures.

Further, the references do not teach the members to be caulked to join the terminal member and insulating member to the plate shaped body. Saito et al. (US 5,586,993), however, teaches a lid for a secondary battery comprising a plate-shaped body formed with a hole; a rivet terminal member and an insulating member superposed in a peripheral edge of the hole with the insulating member arranged under the terminal member; a cylindrical sealing member having a flange portion at one end and inserted into the hole; and a rivet inserted in the sealing member. The Saito reference teaches that the hole of the lid is caulked in order to seal and fix the rivet to the cover plate (col. 3, lines 45-end, col. 7.) It would be obvious to one of ordinary skill in the art at the time the invention was made to caulk the terminal member and insulating member to the plate shaped body as caulking the members will allow for a strong, durable seal between the components of the lid in order to prevent interaction between elements of the interior and exterior environments of the battery casing. Sealing components of a battery lid by caulking is broadly known in the art for this purpose. The artesian would have found the claimed invention to be obvious in light of the teachings of the references.

Allowable Subject Matter

Claims 10-11 and 21-22 are allowed.

The following is an examiner's statement of reasons for allowance:

The instant claims are to a lid for a secondary battery comprising a plate-shaped body formed with a hole therein; a terminal member, an insulating member, wherein the terminal member and insulating member are superposed in a peripheral edge of the hole with the insulating member arranged under the terminal member; a sealing member having a flange portion at one end and inserted into the hole; the sealing member consisting essentially of a flat plate having a hole to form the flange portion and consisting essentially of a cylindrical portion that is separate from the flange portion, and a rivet inserted in the sealing member and calked to join the terminal member and insulating member to the plate shaped body. The prior art does not teach a lid for a secondary battery comprising the elements, as claimed, wherein the sealing member consisting essentially of a flat plate having a hole to form the flange portion and consisting essentially of a cylindrical portion that is separate from the flange portion.

The most pertinent art is JP 11167909, which teaches a lid for a secondary battery comprising a plate-shaped body formed with a hole; a rivet terminal member and an insulating member superposed in a peripheral edge of the hole with the insulating member arranged under the terminal member; a cylindrical sealing member having a flange portion at one end and inserted into the hole; and a rivet inserted in the sealing member. The sealing member comprises a flat plate having a hole to form the flange portion and a cylindrical portion that is separate from the flange portion (see figures 1-4.) The sealing member can be made from fluororesins. The

Art Unit: 1745

reference does not teach a terminal member as defined or the members to be caulked to join the terminal member and insulating member to the plate shaped body.

In addition, Yoshizawa et al. (US 6,132,900) teaches a lid for a secondary battery comprising a plate-shaped body formed with a hole. A cylindrical sealing member having a flange portion at one end is inserted into the hole. A rivet is further inserted in the sealing member and caulked to join the terminal member and insulating member to the plate shaped body (see figure 1; see claim 17 for the caulking sealant.) An electrode lead ribbon is connected to the rivet to conduct electrons from the electrode assembly. The reference does not teach a sealing member that comprises a flat plate having a hole to form the flange portion and a cylindrical portion that is separate from the flange portion. The sealing member is one piece.

As the prior art does not teach a lid for a secondary battery comprising the elements, as claimed, wherein the sealing member consisting essentially of a flat plate having a hole to form the flange portion and consisting essentially of a cylindrical portion that is separate from the flange portion, the claims are allowed. The application notes that having separate pieces will allow for the use of two separate sealing materials that will provide a better seal or the use of cheaper materials to lower costs. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments have been considered but are moot, as the claims have been canceled. New ground(s) of rejection have been added.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner Correspondence

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be

Application/Control Number: 09/987,385

Page 9

Art Unit: 1745

reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-2383. The fax number is 703-872-9306.

Mark Ruthkosky

Primary Patent Examiner

Art Unit 1745

Mark Ruthkosky
12/3/03